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Testing. Advising. Assuring.

Title:

The Performance of Electrical
Switch Assemblies When
Subjected to An Elevated
Temperature Environment

Report No:

WF 318498

Prepared for:

Craig and Derricott Limited

Hall Lane
Walsall Wood
Walsall
West Midlands
WS9 9DP

Date:

25th May 2012

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Executive Summary

Objective This report presents an appraisal of the performance of electrical switch assemblies required to maintain electrical continuity when immersed within an elevated temperature environment of 400 °C.

Report Sponsor **Craig and Derricott Limited**

Address Hall Lane, Walsall Wood, Walsall, West Midlands. WS9 9DP

Summary of Conclusions Based on the discussion contained within this report, it can be concluded that the proposed switch assemblies referenced below may be considered equal to the previously tested assemblies, in terms of their ability to maintain electrical continuity of a live circuit, when exposed to an elevated temperature environment of 400 °C for a period of 120 minutes.

20A	32A	63A
FSDMG0202/HC	FSDDR0322	FSDMR0632
FSDMR0202	FSDDR0323	FSDMR0633
FSDMR0203	FSDDR0323N	FSDMR0633N
FSDMR0203N	FSDDR0324	FSDMR0634
FSDMR0204	FSDDR0323/SOD	FSDMR0633/SOD
FSDMR0203/SOD	FSDDR0323EB	FSDMR0633EB
FSDMR0203EB	FSDDR0323EB/RS	FSDMR0636
FSDMR0203EB/RS	FSDDR0326	FSDMR0636/SOD
FSDMG0206/NOV	FSDDR0326EB*	FSDMR0636EB*
FSDMG0206/HC	FSDDR0326EB/RS	
FSDMR0206*		
FSDMR0206/FW		
FSDMG0206/SOD		
FSDMG0206EB/NOV		
FSDMG0206EB		

*indicates the tested unit.

Valid until 1st June 2017

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Introduction

This report presents an appraisal of the performance of electrical switch assemblies, similar in design to those included within the ad-hoc test reported under the reference WF No. 315815 issue 2.

The proposed switch assemblies are required to maintain the electrical continuity of a live circuit whilst exposed to an elevated temperature environment of 400°C for a period of 120 minutes.

The switches are extensively used in conjunction with high temperature fans and the heating conditions of the ad-hoc test were taken from BS EN 12101-3: 2002 *"Smoke and heat control systems. Specification for powered smoke and heat exhaust ventilators"*, relating to the testing of high temperature fans.

This report considers the performance of the alternative switch assemblies if they were to be subjected to the same exposure conditions and judged against the same criteria used to determine the performance of the original tested switch assemblies. All criteria are as those defined by Craig & Derricott Limited for the original test reported under the reference WF No. 315815 issue 2.

FTSG

The data referred to in the supporting data section has been considered for the purpose of this appraisal which has been prepared in accordance with the Fire Test Study Group Resolution No. 82: 2001.

Assumptions

It is assumed that the switch assemblies will be wall mounted in a similar manner to that utilised in the original test and the fixings used to mount the assemblies to the wall will be capable of supporting the assembly through the required 120 minute duration.

It is further assumed that the connecting cabling shall be as per that included in the original test, and that the supply voltage and electrical load placed upon the proposed assemblies shall be equal to that utilised within the original test.

The exact determination of the electrical capabilities of each unit and their comparison is outside of the area of our expertise and is not included within the scope of this appraisal. In this regard a declaration has been provided by the manufacturer and is included within Annex B of this report.

Proposals

It is proposed that variants of the electrical switch assemblies, similar in design and construction to those included within the test referenced as 'FSDMR0206', 'FSDDR0326EB' and 'FSDMR0636EB', would be capable of providing the same performance, if subjected to the same elevated temperature environment and electrical load conditions as the tested assemblies.

The units proposed within this report are identified as:

20A	32A	63A
FSDMG0202/HC	FSDDR0322	FSDMR0632
FSDMR0202	FSDDR0323	FSDMR0633
FSDMR0203	FSDDR0323N	FSDMR0633N
FSDMR0203N	FSDDR0324	FSDMR0634
FSDMR0204	FSDDR0323/SOD	FSDMR0633/SOD
FSDMR0203/SOD	FSDDR0323EB	FSDMR0633EB
FSDMR0203EB	FSDDR0323EB/RS	FSDMR0636
FSDMR0203EB/RS	FSDDR0326	FSDMR0636/SOD
FSDMG0206/NOV	FSDDR0326EB/RS	
FSDMG0206/HC		
FSDMR0206/FW		
FSDMG0206/SOD		
FSDMG0206EB/NOV		
FSDMG0206EB		

Drawings of the assemblies are included within Annex A.

Basic Evidence

WF No. 315185 issue 2

The test report referenced WF No. 315185 issue 2 provides details of an elevated temperature test which utilising heating conditions taken from BS EN 12101-3: 2002.

The purpose of the test was to evaluate the ability of three specimens of electrical switches referenced 'FSDDR0326EB', 'FSDMR0636EB' and 'FSDMR0206' to maintain the continuity of individual electrical circuits when exposed to an elevated temperature environment of 400°C.

For the purpose of the test the switches were referenced as A-32A, B-63A and C-20A respectively.

The switches were face fixed to the exposed surface of a blockwork wall within the chamber of a 1m³ gas fired furnace such that they were exposed to the heating conditions of nominally 400°C for a period of 120 minutes. The switches were each supplied with a 2 metre length of cable which was connected to a 3kW fan heater to represent the electrical load. A single bulb was included within the circuit to each switch as a visual indicator of the performance during the test.

After an initial heat up period of three minutes the furnace temperature reached a mean temperature of 400°C, where it was held for a duration of 120 minutes. The specimens continued to operate correctly for the full 123 minute test duration.

Assessed Performance

The switch units included in the test were selected as being representative of their respective ranges and as presenting the most onerous case in each instance. Each specimen included the maximum number of poles for that range.

20A Switches

The tested FSDMR0206 comprises a sheet steel enclosure housing a 6 pole, 20 amp switch assembly. The enclosure casing tested had nominal dimensions of 100 mm square by 75 mm deep and was selected as the smallest enclosure housing the largest switch assembly from the 20 amp range. As with all the switch assemblies included in the test, the FSDMR0206 demonstrated its ability to maintain the continuity of a live electrical circuit for the full duration of the test.

All 20 amp units referenced by this report share common switch components with the tested unit which all share the same material properties. The switch range varies only in the number of poles (from 2 to 6 + EB auxilliary contact) meaning that the physical size of the switch assembly alters, but all variations continue to use the same sheet steel enclosure.

It is also noted that a slight variation of enclosure is available, this enclosure remains manufactured from sheet steel of the same thickness as the tested assembly, but has slightly larger external dimension of 110 mm square by 85 mm deep. The relatively minor change in dimensions is not considered to be of any significance to the performance of the switch assembly, if subjected to the test conditions detailed previously.

32A Switches

The tested FSDDR0326EB is a 32 amp, 6 pole plus early break switch assembly mounted within a die-cast alloy enclosure. The enclosure has nominal dimensions of 160 mm square by 109 mm deep and comprises a base and lid, the lid being secured to the base via four M5 bolts. As with all the switch assemblies included in the test, the FSDDR0326EB demonstrated its ability to maintain the continuity of an electrical circuit for the full duration of the test.

All 32 amp units referenced by this report share common switch components with the tested unit which all share the same material properties. The switch range varies only in the number of poles (from 2 to 6 + EB auxiliary contact) meaning that the physical size of the switch assembly alters, but all variations continue to use the same die-cast alloy enclosure.

It is therefore considered that all of the 32 amp switch model variants proposed by this report should be capable of providing the same level of performance as the tested assembly.

63A Switches

The FSDMR0636EB switch assembly included in the test is a 63 amp, 6 pole plus early break switch assembly mounted within a sheet steel enclosure. The enclosure has nominal dimensions of 250 mm square by 165 mm deep and comprises a base assembly and a side hung, lockable hinged lid.

The tested assembly was selected as the largest switch assembly from the 63 amp range and demonstrated its ability to maintain the continuity of a live electrical circuit for the test duration.

All 63 amp units referenced by this report share common switch components with the tested unit which all share the same material properties. The switch range varies only in the number of poles (from 2 to 6 + EB auxiliary contact) meaning that the physical size of the switch assembly alters, but all variations continue to use the same sheet steel enclosure.

In terms of performance under the specified test conditions, the performance of the proposed units, as variants of the tested assemblies, can be considered to be equal to that of the tested units.

In all other respects the construction of the units is sufficiently similar to provide confidence in the ability of the proposed switch assemblies to be capable of an equal performance, should they be subject to the same test conditions.

The manufacturer has also provided his declaration, included in Annex B, confirming that all switch assemblies use common switch components, have the same material properties and the same electrical ratings.

Conclusions

Based on the discussion contained within this report, it can be concluded that the proposed alternative switch assemblies may be considered equal to the previously tested assemblies, in terms of their ability to maintain electrical continuity of a live circuit, when exposed to an elevated temperature environment of 400 °C for a period of 120 minutes.

Validity

This assessment is issued on the basis of test data and information available at the time of issue. If contradictory evidence becomes available to **Exova Warringtonfire** the assessment will be unconditionally withdrawn and Craig & Derricott Limited will be notified in writing. Similarly the assessment is invalidated if the assessed construction is subsequently tested because actual test data is deemed to take precedence over an expressed opinion. The assessment is valid initially for a period of five years i.e. until 1st June 2017, after which time it is recommended that it be returned for re-appraisal.

The appraisal is only valid provided that no modifications are made to the appraised construction.

Summary of Primary Supporting Data

WF No. 315185

A test report providing details of an elevated temperature test conducted utilising heating conditions taken from BS EN 12101-3: 2002.

The purpose of the test was to evaluate the ability of three specimens of electrical switches referenced as follows: 'FSDMR0206 (6 pole 20A switch in smallest enclosure)', 'FSDDR326EB, (6 pole 32A switch with early break contacts) and FSDMR0636EB, (6 pole 63A switch with 2 early break contacts) which for the purpose of the test were referenced by Exova Warringtonfire as A-32A, B-63A and C-20A respectively.

For the purpose of the test the switches were referenced as '63', '20' and '32' respectively.

The switches were face fixed to the exposed surface of a blockwork wall within the chamber of a 1.5m wide by 2m deep gas fired furnace such that they were exposed to the heating conditions of nominally 400°C for a period of 120 minutes. The switches were supplied with a 2 metre length of cable which was connected to a 3kW fan heater to represent the electrical load. A single bulb was included within the circuit to each switch to act as a visual indicator of the performance during the test.

After an initial heat up period of three minutes the furnace temperature reached a mean temperature of 400°C, where it was held for a duration of 120 minutes. The specimens continued to operate correctly for the full 123 minute test duration.

The test was discontinued after a period of 123 minutes.

Test date : 17th February 2012

Test sponsor : Craig & Derricott Limited

Declaration by Craig & Derricott Limited

We the undersigned confirm that we have read and complied with the obligations placed on us by the UK Fire Test Study Group Resolution No. 82: 2001.

We confirm that the component or element of structure, which is the subject of this assessment, has not to our knowledge been subjected to a test to the criteria against which the assessment is being made.

We agree to withdraw this assessment from circulation should the product be the subject of a test to the conditions against which this assessment is being made.

We are not aware of any information that could adversely affect the conclusions of this assessment.

If we subsequently become aware of any such information we agree to cease using the assessment and ask **Exova Warringtonfire** to withdraw the assessment.

Signed:

For and on behalf of:

Signatories



Responsible Officer

D. Forshaw * - Principal Certification Engineer



Approved

D. Hankinson * - Principal Certification Engineer

* For and on behalf of **Exova Warringtonfire**.

Report Issued: 25th May 2012

The assessment report is not valid unless it incorporates the declaration duly signed by the applicant.

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32A Switch Assembly

REF	QTY	PART NUMBER	DESCRIPTION	COMMENTS
1	13	RSC0024	32A HD BEAR BOX CLAMP	SEE NOTE 4
2	8	RSC0107	CONTACT SPRING	SEE NOTE 4
3	4	RSC0113	MECH SPRING	SEE NOTE 3
4	1	RSC2061	90° STAR WHEEL WITH SHAFT THROUGH 45°	SEE NOTE 3
5	1	RSC2481	90° STAR WHEEL WITH SHAFT THROUGH 45°	SEE NOTE 3
6	4	RSC2500	CONTACT SWITCH BASE	SEE NOTE 4
7	1	RSC2601	MECHANISM BASE	SEE NOTE 4
8	0	RSC2696	32A FIXED CONTACT	SEE NOTE 4
9	4	RSC2607	FRS 32A NO VNG CONTACT	SEE NOTE 4
10	1	RSC2610	STAR WHEEL RETAINER	SEE NOTE 4
11	2	RSC2611	32A NEU TRAIL LINK	SEE NOTE 4
12	4	RSC2612	CONTACT BASE PLUG	SEE NOTE 4
13	1	RSC2615-04	SHAFT FOR 25A + 32A UD MOUNT	SEE NOTE 2
14	2	RSC2617-03	BAR C/SK SCR EW 3/8X3/4	SEE NOTE 2
15	4	RSC2618	MOVING CONTACT CAM FOLLOWER	SEE NOTE 4
16	4	RSC2620	MECHANISM CAM FOLLOWER	SEE NOTE 4
17	1	RSC2621	TOP PLATE - 32A	
18	1	RSC2622	BOTTOM PLATE - 25A + 32A	SEE NOTE 3 & 4
19	1	RSC2620A	SWITCH CAM	SEE NOTE 3 & 4
20	2	RSC2620A15	SWITCH CAM	SEE NOTE 3 & 4

13 RSC2615-04
SHAFT FOR 25A + 32A UD MOUNT

14 RSC2617-03
BAR C/SK SCR EW 3/8X3/4

15 RSC2618
MOVING CONTACT CAM FOLLOWER

16 RSC2620
MECHANISM CAM FOLLOWER

17 RSC2621
TOP PLATE - 32A

18 RSC2622
BOTTOM PLATE - 25A + 32A

19 RSC2620
SWITCH CAM

20 RSC2620A15
SWITCH CAM

1 RSC3501
MECHANISM BASE

2 RSC00113
MECH SPRING

3 RSC2061
90° STAR WHEEL WITH SHAFT THROUGH 45°

4 RSC2610
STAR WHEEL RETAINER

5 RSC3481
DIN 6798 D1500 TYPE CIRCUIT

6 RSC3500
CONTACT SWITCH BASE

7 RSC3501
MECHANISM BASE

8 RSC3500
CONTACT SWITCH BASE

9 RSC3500
CONTACT SWITCH BASE

10 RSC3500
CONTACT SWITCH BASE

11 RSC3500
CONTACT SWITCH BASE

12 RSC3500
CONTACT SWITCH BASE

13 RSC3500
CONTACT SWITCH BASE

14 RSC3500
CONTACT SWITCH BASE

15 RSC3500
CONTACT SWITCH BASE

16 RSC3500
CONTACT SWITCH BASE

17 RSC3500
CONTACT SWITCH BASE

18 RSC3500
CONTACT SWITCH BASE

19 RSC3500
CONTACT SWITCH BASE

20 RSC3500
CONTACT SWITCH BASE

18 RSC3522
BOTTOM PLATE - 25A + 32A

NOTES:
01 ACTUAL SWITCH CONFIGURATION WILL VARY. SEE SWITCH SKIN FOR PRECISE DETAILS OF SWITCH CONFIGURATION.
02 PART NUMBER/LENGTH MAY VARY. REFER TO SWITCH SKIN.
03 PART NUMBER MAY VARY. REFER TO SWITCH SKIN.
04 QUANTITIES SHOWN ABOVE MAY VARY. SEE SWITCH SKIN AND/OR MANUFACTURING TRAVELLER FOR PRECISE DETAILS.

SHEET 1 OF 2

CRF No	MODIFICATION DETAILS	BY	DATE	CHKD BY	DATE	APPD BY	DATE	MATERIAL
FINISH:								
DIMENSIONS SHOWN IN ARE CRITICAL DIMENSIONS								
FIRST ANGLE PROJECTION								
SCALE:								
A3 TITLE: GENERAL ASSEMBLY OF 32A SWITCH RC RANGE - RC40 DRG No: RSA 1244 ISSUE: 1								

32A Switch Assembly

<p>SWITCH MECHANISM - TYPICAL ASSEMBLY</p> <ul style="list-style-type: none"> 7 RSCC301 MECHANISM BASE 8 RSCC321 MECHANISM CAM FOLLOWER 9 RSCC107 CONTACT SPRING 10 RSCC310 STAR WHEEL RETAINER 11 RSCC113 MECH SPRING 12 RSCC081 80° STAR WHEEL WITH SHAFT THROUGH 45° 	<p>FULL BASE - TYPICAL ASSEMBLY</p> <ul style="list-style-type: none"> 1 RSCC300 CONTACT SWITCH BASE 2 RSCC307 FRS 32A MOVING CONTACT 3 RSCC107 CONTACT SPRING 4 RSCC004 32A KONICAR BOX CLAMP 5 RSCC305 32A FIXED CONTACT 6 RSCC319 MOVING CONTACT CAM FOLLOWER 7 RSCC318 FRS 32A NEUTRAL LINK 8 RSCC310 CONTACT SWITCH CAM 9 RSCC311 SWITCH CAM 10 RSCC313 CONTACT BASE PLUG 	<p>HALF BASE + NEUTRAL LINK - TYPICAL ASSEMBLY</p> <ul style="list-style-type: none"> 1 RSCC300 CONTACT SWITCH BASE 2 RSCC311 32A NEUTRAL LINK 3 RSCC004 32A KONICAR BOX CLAMP 4 RSCC305 32A FIXED CONTACT 5 RSCC319 MOVING CONTACT CAM FOLLOWER 6 RSCC318 FRS 32A MOVING CONTACT 7 RSCC107 CONTACT SPRING 8 RSCC310 CONTACT SWITCH CAM 9 RSCC311 SWITCH CAM 10 RSCC313 CONTACT BASE PLUG 		
<p>HALF BASE - TYPICAL ASSEMBLY</p> <ul style="list-style-type: none"> 1 RSCC300 CONTACT SWITCH BASE 2 RSCC107 CONTACT SPRING 3 RSCC307 FRS 32A MOVING CONTACT 4 RSCC319 MOVING CONTACT CAM FOLLOWER 5 RSCC004 32A KONICAR BOX CLAMP 6 RSCC305 32A FIXED CONTACT 7 RSCC313 CONTACT BASE PLUG 8 RSCC320A SWITCH CAM 	<p>NEUTRAL LINK - TYPICAL ASSEMBLY</p> <ul style="list-style-type: none"> 1 RSCC300 CONTACT SWITCH BASE 2 RSCC311 32A NEUTRAL LINK 3 RSCC004 32A KONICAR BOX CLAMP 4 RSCC305 32A FIXED CONTACT 5 RSCC313 CONTACT BASE PLUG 			
<p>REF. NO. MODIFICATION DETAILS BY DATE</p> <p>APPROVALS: CHG. JAM 02/11/11, DEN. BOO 02/11/11, BT DATE</p> <p>FINISH: MATERIAL: APR. LAS 02/11/11</p> <p>PROPERTY OF CS&D AND DERIVATIVE LIMITED AND OTHER TRADE RELATED PARTS AND SERVICES ARE THE PROPERTY OF CS&D AND DERIVATIVE LIMITED.</p>			<p>DIMENSIONS SHOWN IN ARE CRITICAL DIMENSIONS</p> <p>FIRST ANGLE PROJECTION</p> <p>SCALE: 1:1</p>	<p>CS&D CRAIG & DERRICOTT</p> <p>A3 TITLE: GENERAL ASSEMBLY OF 32A SWITCH</p> <p>DRG NO: RSA 1244</p> <p>ISSUE: 1</p>

63A Switch Assembly

REF	QTY	PART NUMBER	DESCRIPTION	COMMENTS
1	6	RSIC0141	M6 SPRING WASHER DIN127B	SEE NOTE 4
2	2	RSIC01951	M6 FULL NUT DIN934	SEE NOTE 4
3	12	RSIC0104	32A HOUSING BOX CLAMP	SEE NOTE 4
4	6	RSIC0197	CON TACT SPRING 6	SEE NOTE 4
5	4	RSIC0113	MECH SPRING	SEE NOTE 5
6	1	RSIC0200	STAR WHEEL	SEE NOTE 2
7	1	MECH011	PM SPRING WHEEL TYPE ENCLOSURE	SEE NOTE 2
8	4	RSIC0300	CON TACT SWITCH BASE	SEE NOTE 4
9	1	RSIC0201	M6 X 4MM SW BASE	SEE NOTE 4
10	8	RSIC0205	32A FIXED CONTACT	SEE NOTE 4
11	4	RSIC0207	PM 32A MOVING CONTACT	SEE NOTE 4
12	1	RSIC0210	STAR WHEEL RETAINER	SEE NOTE 4
13	2	RSIC0211	32A NEUTRAL LINK	SEE NOTE 4
14	4	RSIC0213	CON TACT BASE PLUG	SEE NOTE 4
15	1	MECH016	WHAFT - 60A BASE MOUNT	SEE NOTE 2
16	2	RSIC0217-020	M4 X 50 NEW 01985	SEE NOTE 2
17	4	RSIC0218	MOVING CONTACT CAM FOLLOWER	SEE NOTE 4
18	4	RSIC0203	M6 X 4MM SW CAM FOLLOWER	SEE NOTE 4
19	1	RSIC0213	TOP PLATE - 63A	
20	1	RSIC0204	BOTTOM PLATE - 63A	

REF	QTY	PART NUMBER	DESCRIPTION	COMMENTS
21	2	RSIC0300B	SWITCH CAM	SEE NOTES 2&4
22	1	RSIC0300	SWITCH CAM	SEE NOTES 2&4
23	6	RSIC0370	60A INTER-BASE LINK CONNECTION	SEE NOTE 4

NOTES:
 01 ACTUAL SWITCH CONFIGURATION WILL VARY. SEE DRAWING FOR PRECISE DETAILS OF SWITCH COMPONENTS.
 02 PART NUMBER/LENGTH MAY VARY. REFER TO SWITCH SKIN.
 03 PART NUMBER MAY VARY. REFER TO SWITCH SKIN.
 04 QUANTITIES SHOWN ABOVE MAY VARY. SEE SWITCH SKIN AND/OR MANUFACTURING TRAVELLER FOR PRECISE DETAILS.

APPROVALS:
 APP: JAS 20111111
 CHK: JAM 20111111
 DEN: RAD 20111111
 BY: DATE
 BY: DATE

MATERIAL:
 DIMENSIONS SHOWN IN ARE CRITICAL DIMENSIONS
 FIRST ANGLE PROJECTION
 SCALE: NTS

CD CRAGG DERICOTT
 ORIGINAL ASSEMBLY OF 63A SWITCH
 RC RANGE - 0102
 DRG NO: RSA1245
 ISSUE: 1

SHEET 1 OF 2

63A Switch Assembly

SWITCH MECHANISM - TYPICAL ASSEMBLY		FULL BASE - TYPICAL ASSEMBLY		HALF BASE + NEUTRAL LINK - TYPICAL ASSEMBLY	
<p>1 PSC3501 MECHANISM BASE 2 PSC3510 STARWHEEL REMOVER 3 PSC3513 MECH SPRING 4 PSC3510 STARWHEEL 5 PSC3513 MECH SPRING 6 PSC3510 STARWHEEL 7 PSC3510 MECHANISM CAM FOLLOWER</p>	<p>1 PSC3500 CONTACT SWITCH BASE 2 PSC3507 FRS 32A MOVING CONTACT 3 PSC3510 CONTACT SPRING 4 PSC3504 32A KONICAR BOX CLAMP 5 PSC3505 32A FIXED CONTACT 6 PSC3518 MOVING CONTACT CAM FOLLOWER 7 PSC3509AEB SWITCH CAM 8 PSC3509AEB SWITCH CAM</p>	<p>1 PSC3500 CONTACT SWITCH BASE 2 PSC3507 FRS 32A MOVING CONTACT 3 PSC3510 CONTACT SPRING 4 PSC3504 32A KONICAR BOX CLAMP 5 PSC3505 32A FIXED CONTACT 6 PSC3518 MOVING CONTACT CAM FOLLOWER 7 PSC3509AEB SWITCH CAM 8 PSC3509AEB SWITCH CAM 9 PSC3511 32A NEUTRAL LINK</p>			
<p>1 PSC3500 CONTACT SWITCH BASE 2 PSC3507 FRS 32A MOVING CONTACT 3 PSC3510 CONTACT SPRING 4 PSC3504 32A KONICAR BOX CLAMP 5 PSC3505 32A FIXED CONTACT 6 PSC3518 MOVING CONTACT CAM FOLLOWER 7 PSC3509AEB SWITCH CAM 8 PSC3509AEB SWITCH CAM</p>	<p>1 PSC3500 CONTACT SWITCH BASE 2 PSC3507 FRS 32A MOVING CONTACT 3 PSC3511 32A NEUTRAL LINK</p>	<p>1 PSC3500 CONTACT SWITCH BASE 2 PSC3507 FRS 32A MOVING CONTACT 3 PSC3510 CONTACT SPRING 4 PSC3504 32A KONICAR BOX CLAMP 5 PSC3505 32A FIXED CONTACT 6 PSC3518 MOVING CONTACT CAM FOLLOWER 7 PSC3509AEB SWITCH CAM 8 PSC3509AEB SWITCH CAM</p>			

SHEET 2 OF 2

APPROVALS:

DESIGNED BY	CHKD BY	DATE
APPROVED BY	CHKD BY	DATE

DATE: 23/11/11

DATE: 23/11/11

CRAIG DERRCOTT

DRG NO: RSA1245

ISSUE: 1

9-Design Engineering - CAD Designer: S.A.S. - 01452 854343 - 01452 854343

Manufacturing Engineering - 01452 854343 - 01452 854343

Annex B

Declaration by Craig & Derricott Limited

Declaration



We the Supplier:

Craig & Derricott Limited
Hall Lane, Walsall Wood, Walsall, West Midlands, WS9 9DP, United Kingdom

Herewith declare that products manufactured & assembled by Craig & Derricott Ltd as:

Fire rated switch-disconnectors, (Trade name i-switch Fire rated switch-disconnectors)

- 20A FSDMG0202/HC, FSDMR0202, FSDMR0203, FSDMR0203N, FSDMR0204, FSDMR0203/SOD, FSDMR0203EB, FSDMR0203EB/RS, FSDMG0206/NOV, FSDMG0206/HC, FSDMR0206, FSDMG0206/FW, FSDMG0206/SOD, FSDMG0206EB/NOV, FSDMG0206EB.
- 32A FSDDR0322, FSDDR0323, FSDDR0323N, FSDDR0324, FSDDR0323/SOD, FSDDR0323EB, FSDDR0323EB/RS, FSDDR0326, FSDDR0326EB, FSDDR0326EB/RS, FSDDR0326EB/MAR, FSDDR0326EB/MAR/P.
- 63A FSDMR0632, FSDMR0633, FSDMR0633N, FSDMR0634, FSDMR0633/SOD, FSDMR0633EB, FSDMR0636, FSDMR0636/SOD, FSDMR0636EB.

Catalogue Refs FSD
FSD[*][*][*][*][*][*]
FSD[M or D (Sheet steel or die cast Aluminium) enclosure
FSD[*]R (Red) or G (Grey) paint finish
FSD[*][*]032(20A, 32A or 63A) rating
FSD[*][*][*][*]No of poles (2, 3, 4 or 6) + EB (Aux Contacts)
e.g. **FSDMR0323EB**

Are manufactured using common switch components, which have the same material properties.

Technical File

10-CD022

Signature: 

Name: Glen Williams MET Eng Tech

Position: Senior Electrical Engineer

Date: : 23rd May 2012

